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ABSTRACT

Some basic historical college participation statistics from New York State and a set of factors that may influence full-time undergraduate attendance in the future are described. Some specific measures of college participation, including the College Going Rate and the College Entrance Index (CEI), are introduced. The most significant findings are that 1975 was the peak year for CEI, that CEI has declined slightly since then, and that the relative participation of men and women has changed substantially in recent years. Information is provided on regional and county college entrance indices. Environmental, student, and institutional factors influence college participation rates. Environmental factors include increasing costs, declining rates of return on investments in college education, increasing participation of women and minority groups, tuition assistance program incentives, economic hardships, increasing job requirement, and termination of G.I. Bill. Student factors include population shifts, sibling squeeze, changing student composition, more stringent high school graduation requirements, family background in education, and military pressures. Institutional factors include tuition changes at the City University of New York, improved accessibility, selectivity levels, institutional recruitment and adjustment, enrollment ceilings, and net price levels. (SW)

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COLLEGE PARTICIPATION IN NEW YORK STATE

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Cultural Education Center (5B44)
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COLLEGE PARTICIPATION RATES IN NEW YORK STATE:

Historical Statistics

and

Influential Factors

October 1978

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Office of Postsecondary Research, Information Systems and Institutional Aid
Cultural Education Center
Albany, New York 12230

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FOREWORD

This is the second of a series of reports related to higher education enrollment patterns and trends prepared by the Office of Postsecondary Research, Information Systems and Institutional Aid (OPRISIA). The first report, Student Demand for Higher Education: An Annotated Bibliography, provides summaries of 146 reports and other documents related to student demand. Other reports in the series will deal with a variety of related topics including enrollment projections, student choice of institutions, institutional drawing power, and student residence and migration.

This set of topics indicates the broad interest of the State Education Department in student demand for higher education. These reports and the research that underlies them will serve as inputs to a variety of policy-related activities including the formulation of enrollment goals and the evaluation of financing strategies for higher education. Equally important is the support which this information can provide to institutional planning.

Most of the data included in the report were obtained from the computer-based Higher Education Data System (HEDS) maintained by OPRISIA. Some were obtained from the Information Center on Education in the State Education Department. Interstate migration statistics are from the National Center for Educational Statistics (NCES).

This paper was prepared by Glenwood Rowse. Inquires about the paper and requests for additional information should be directed to him at (518) 474-5091.

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CHAPTER 1

INTRODUCTION

Next to changes in the size of pools from which freshmen are drawn (e.g., high school graduates), fluctuations in college participation rates produce the greatest changes in degree-credit higher education enrollment. A decrease in the New York State statewide college participation rate for high school graduates of one percent in 1975 would have resulted in 2,500 fewer full-time freshmen. If sustained for four years the total impact of such a decline on full-time undergraduate enrollment based on recent attrition patterns would have been approximately 8,000 fewer students. Because changes in the rate of as much as three percent in successive years are not uncommon, the total impact on enrollment could be as much as 25,000 students.

The possibility that 8,000 to 25,000 more or fewer students might attend college in New York State has significant implications for planners, even if the difference were distributed evenly among all institutions. However, changes in rates tend to reflect the decisions of specific population subgroups (for example, high income families, women, or low ability students). Consequently, the impact of such changes on institutions will differ according to the types of students each institution attracts.

Faced with expected declines in the number of high school graduates, institutional planners would like to be able to encourage more and different students to participate in higher education and to maintain or increase their share of entering students. However, the ratio of resident freshmen to high school graduates would have to increase from 57 percent in 1975 to 88 percent in 1990 if freshmen enrollment were to remain stable. It is

extremely unlikely that such an increase can occur; it is also unlikely that an increase in college participation by adults can make up the difference. For these reasons institutions must perform studies to determine which actions to attract students are most appropriate to them. These analyses will require an understanding of the conditions which influence participation rates and an identification of those geographical areas and population subgroups where significant increases in participation appear to be possible. County-by-county statistics and projections for high school graduates, population levels, and participation rates will help pinpoint areas for expanded recruiting efforts. To support such analyses this paper provides some basic historical college participation statistics from New York State and identifies a set of factors which may influence full-time undergraduate attendance in the future.

Before proceeding with the discussion, a few words about terminology are in order. There are a variety of statistics and terms related to college attendance, and few standards have been established. In this paper "college participation" and "college participation rate" are generic terms used primarily to identify the broad topic. "College-Going Rate" refers to the specific fraction or percentage of high school graduates that go on to college in the year after graduation. Unfortunately, this percentage cannot be easily measured because it requires postsecondary enrollment information on all high school graduates. (See Information Center on Education [1978] for illustrative statistics based on intentions of high school seniors.)

In practice, where quantitative results are required, it is necessary to rely on more accessible statistics. "College Entrance Index," sometimes abbreviated CEI, has a specific meaning linked to the enrollment projection methodology used in New York State. It is computed as follows:

$$CEI = \frac{\text{Number of Fall Full-Time First-Time Students from N.Y.S.}}{\text{Number of N.Y.S. High School Grads in the Previous Year}}$$

This statistic is used to avoid dependence on national data regarding interstate student residence and migration which is not available every year. It "overlooks" the fact that not all students enroll in college right out of high school. Historically only about 80 percent of the first-time freshmen graduate from high school in the preceding year. The other 20 percent are "adults" of some sort. This means that the ratio does not represent the actual proportion of New York State high school graduates who choose to enter college immediately after graduation. Nor does this ratio consider the first-time participation of high school graduates and others on a part-time basis. Consequently, the overall tendency to attend college is underestimated by the use of this ratio. It does, however, indicate trends in college attendance, and it does provide a sound basis for projecting the number of freshmen in the State.

Another term that appears often in discussions of college enrollment and participation is "freshman." In this report this refers to full-time, first-time students.

A number of other concepts and statistics that are important for careful study of college participation are described in Chapter 2 of this report. Chapter 3 identifies a series of specific factors and events that may have a significant impact on college attendance. A brief summary is provided in Chapter 4.

CHAPTER 2

TRENDS IN HISTORICAL COLLEGE PARTICIPATION RATES

Readers may already have uneasy feelings that college participation statistics are not as simple and straightforward as they might have imagined. This chapter presents a variety of historical statistics related to college attendance in New York State which illustrate the major definitional and measurement problems. They also provide some numerical reference points for planning purposes.

Several statistics related to college attendance could be utilized by planners and policymakers. They include the percentage of high school graduates from the state that go on to college anywhere in the succeeding fall term, the percentage of high school graduates from the state that go on to college instate in the succeeding fall term, and the percentage of the adult population in the state attending college. These are described in some detail below, along with additional statistics on regional and county College Entrance Indices.

One of the most important statistics related to college attendance is the percentage of high school graduates from a state who go on to college anywhere in the country the year after graduation (i.e., the College Going Rate [CGR]). Unfortunately, this statistic cannot be measured directly without an elaborate survey because the figure involves students attending college out-of-state. One must also have an estimate of the percentage of new freshmen that did not graduate from high school in the previous year. The basic formula used to estimate this rate in the discussion that follows is:

CGR = (Fraction of resident freshmen who graduated from high school in the previous year X CEI) + Fraction of high school graduates from the state going to college out-of-state.

For New York State in 1975:

$$CGR = (0.813 \times 0.571) + 0.129 = 0.585$$

where "Fraction of resident freshmen who graduated the previous year" is based on the age distribution of actual students in New York State. (It is assumed that first-time students 20 years old or older are adults that have not gone to college immediately after high school graduation.)

From this statistic one can develop an estimate of the instate participation rate of New York State high school graduates the year after graduation. This requires an estimate of the fraction of New York State students attending college outside the state, which can be obtained from national residence and migration statistics. In 1975 about 22 percent (13/58) of NYS students going to college chose an institution outside New York State. Thus, the instate participation rate for 1975 was about 45 percent (58 - 13 = 45).

From national statistics on student residence and migration one can also determine the rate of in-migration of freshmen from other states and nations. For 1975 this rate was 6.4 percent.

A summary of these four basic statistics for New York State in 1975 is provided in Table 1 and Figure 1. The table also indicates some of the relationships that exist among these statistics.

Another related statistic is the proportion of the adult population (ages 15-59) in New York State involved in any kind of higher education program. Estimates of this statistic for the years 1970 through 1977 are shown in Table 2. It is an approximation because out-of-state and foreign students could not be excluded for most years. The table indicates that participation rose from 7.25 percent in 1970 to 8.57 percent in 1976, a significant portion of the total adult population.

Table 1. SUMMARY OF SELECTED
COLLEGE PARTICIPATION RATE STATISTICS

New York State 1975

	Type of Full-Time, First-Time Students	Rate[1]
A	Previous Year's NYS High School Graduates Enrolled in New York State	45.7%
B	"Commuting" NYS Residents Enrolled in New York State	11.4%
C	Residents of New York State Enrolled in other States	12.9%
D	Residents of Other States Enrolled in New York State	6.4%
A+B	NYS Residents Enrolled in New York State (College Entrance Index — CEI)	57.1%
A+C	Previous Year's NYS High School Graduates Enrolled in the United States (Estimated CGR)	58.5%
A+B+D	All Freshmen Enrolled in New York State	63.5%
A+B+C	NYS Residents Enrolled in the United States	70.0%

NOTES:

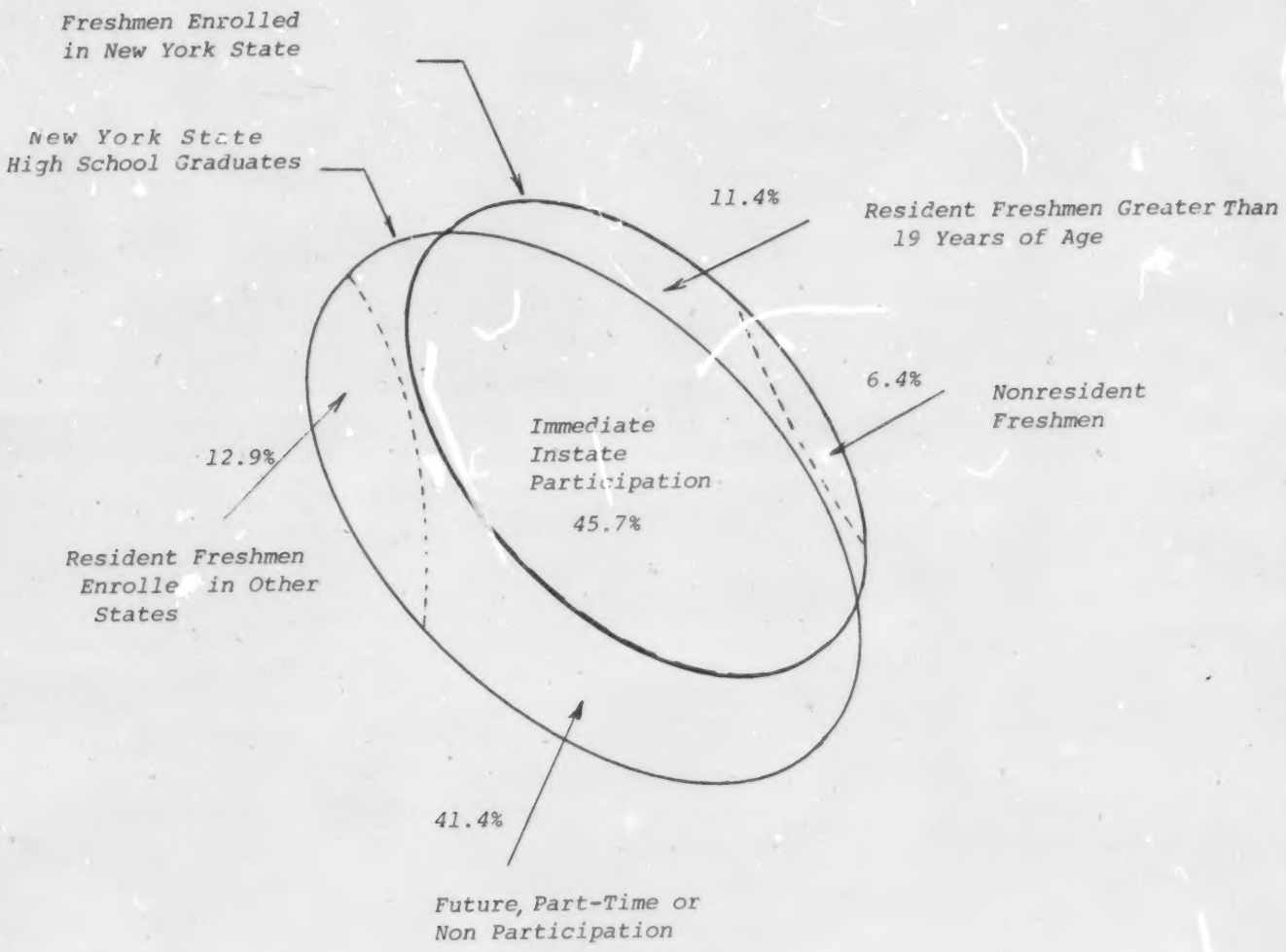
(1) Calculated by dividing the number in each group by the number of New York State high school graduates in the previous spring.

(2) The actual percentage of older new students (20 years old or older) is estimated to be 18.7%. The 11.4% in this table related the number of older students to high school graduates for easier comparison in this table.

SOURCE: NYSED: Postsecondary Information Systems/HEDS. (GLR/27 JUN 78)
National Center for Educational Statistics (NCES)

Figure 1

COLLGE PARTICIPATION IN NEW YORK STATE[1]
1975



[1] *Full-Time First-Time Students - As a percent of High School Graduates.*

SOURCE: NYSED: Postsecondary Information Systems/HEDS. (GLR/June 1978).

TABLE 2. PERCENTAGE OF
NEW YORK STATE ADULT POPULATION ATTENDING COLLEGE[1]
1970 to 1977

YEAR	FTUG[2]	PTUG[2]	FTGR[2]	PTGR[2]	FT & PT[2] FPRO	Grand[2] Total
1970	4.17%	1.60%	0.39%	0.94%	0.15%	7.25%
1971	4.40	1.65	0.40	0.99	0.16	7.60
1972	4.43	1.83	0.40	1.06	0.16	7.88
1973	4.58	2.04	0.41	1.11	0.16	8.30
1974	4.76	2.17	0.42	1.15	0.17	8.67
1975	5.05	2.36	0.43	1.14	0.17	9.15[3]
1976	4.92	2.09	0.42	0.96	0.18	8.57[3]
1977	4.92	2.04	0.41	0.92	0.20	8.49

NOTES:

(1) Total NYS Enrollment ÷ Population Ages 15-59 X (100): (Includes out-of-state and foreign students)

(2) Key:

FTUG = Full-Time Undergraduate
PTUG = Part-Time Undergraduate
FTGR = Full-Time Graduate
PTGR = Part-Time Graduate
FT & PT FPRO = Full-Time and Part-Time First-Professional

(3) The actual statistics for 1975 and 1976 after excluding out-of-state and foreign students are 8.2 percent and 7.7 percent, respectively.

SOURCE: NYSED: Postsecondary Information Systems/HEDS. (GLR/27 JUN 78).

The college Entrance Index in New York State rose dramatically between 1963 and 1968, then remained relatively stable to 1975 as shown in Table 3. More detailed data in Table 4 shows a slight decline in the index in the early 1970's with a peak in 1975. The index fell by three percent in fall 1976 primarily because of a significant decline in New York City's index (attributable largely to the fiscal situation in the City). However, small declines occurred in the indices for almost all regions of the state in that year, suggesting other borader influences. In 1977 the statewide index returned to near the 1975 peak level. Similar trends in enrollment rates have been observed nationally from over the same period.

Men and Women

The discussion so far is based on aggregate statistics including both men and women. There have been differences in college participation for men and women in recent years which are summarized briefly in this section. In general, the enrollment rates for men rose during the 1950's and 1960's followed by a downward trend in the first half of the 1970's. The increases may be attributable to (a) increases in participation of the 25 plus age group, (b) increases in local college accessibility, (c) expansion of student aid programs, (d) more liberal admissions policies associated with the new community colleges, and (e) the ending of the Vietnam war draft which increased the available male pool 1965-1969 (Bishop, 1977). By 1970 these influences seemed to have run their course and market conditions began to have a negative effect on participation rates for men.

While the rate for men declined in response to the economic times and labor markets, the rates for women and minorities increased enough for the net effect to be positive (Higher Education and National Affairs Newsletter, 1977). This change was also noted in a recent advance report

TABLE 3. TRENDS IN FRESHMEN ENROLLMENTS
AND COLLEGE PARTICIPATION RATES
1963, 1968, 1975

	Full-Time First-Time Students		
	1963	1968	1975
Enrolled in New York State From New York State (A)	57,200	126,386	141,753
Enrolled in Other States From New York State (B)	22,928	31,151	31,828
Total From New York State (C)	80,128	157,537	173,581
Enrolled in New York State From Out-of-State	10,268	15,388	15,971
	High School Graduates		
New York State High School Graduates (E)	172,218	223,189	248,120
	College Entrance Indices (CEI)		
In-State CEI of New York State Residents (A/E)	.332	.561	.571
Out-of-State CEI of New York State Residents (B/E)	.133	.145	.129
Total New York State CEI (C/E)	.465	.706	.700

NOTE: Enrollment figures include both recent high school graduates and "adults."

SOURCES OF DATA: NYSED: Postsecondary Information Systems/HEDS (GLR/27 JUN 78).

Out-of-State Enrollments: NCES

High School Graduates: Information Center on Education

TABLE 4. TRENDS IN NEW YORK STATE COLLEGE ENTRANCE INDICES BY REGION[3]

	1972	1973[1]	1974	1975	1976	1977
Western	.484	.443	.529	.534	.522	.517
Genesee Valley	.440	.404	.457	.498	.461	.467
Central	.455	.457	.462	.540	.494	.478
Northern	.429	.415	.439	.457	.427	.395
Northeast	.472	.443	.494	.527	.518	.515
Mid-Hudson	.440	.433	.442	.549	.519	.549
New York City	.635	.681	.680	.701	.634	.696
Long Island	.484	.490	.535	.547	.515	.529
Out-of-State	.517	.517	.525	.530	.530	NA
Statewide	.530	.539[2]	.567	.571	.543	.564

NOTES:

(1) 1973 historical, calculated from residence and migration data without adjusting to match the basic enrollment data. Consequently they are slightly low. Regional figures from 1976 Statewide Plan.

(2) The correct adjusted value for 1973.

(3) These figures are based on in-State residents and enrollees.

Figures are full-time, first-time Freshmen ÷ High School Graduates

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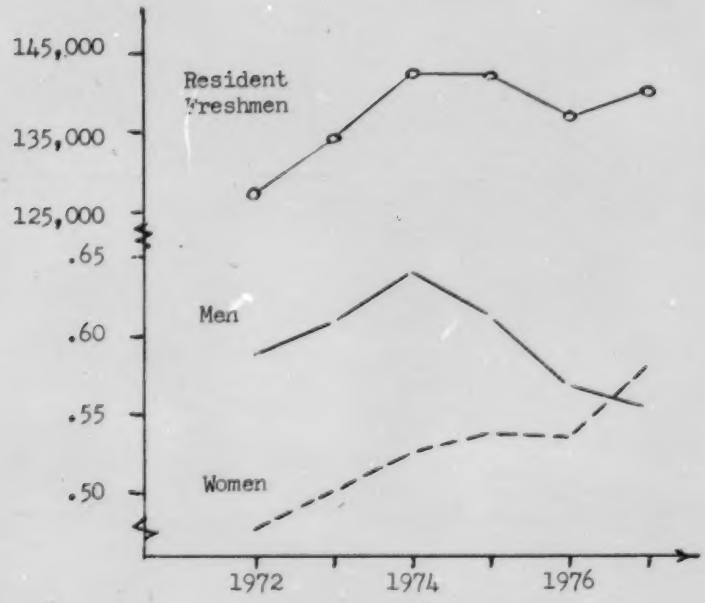
SOURCE: Postsecondary Information Systems, NYSED(GLR/9-78).

on enrollments by the U.S. Bureau of Census (1977), which reported that the proportion of the college population that was female between ages 14 and 19 was 54 percent in 1976, in contrast to 46 percent in 1966. For the 20-21 age group, the corresponding numbers for 1976 and 1966 were 50 and 39 percent; and for the 22-24 age group 42 and 27 percent.

All statistics cited above are for the nation as a whole. Estimates of the CEI for men and women in New York State have also been developed based on data collected from the colleges and universities. The following percentages reflect the instate CEI:



College Entrance Index

Year	Men	Women	Resident Full-Time Freshmen
1972	58.7%	47.7%	127,296
1973	60.8%	50.1%	134,370
1974	64.2%	52.7%	142,146
1975	61.2%	53.6%	142,025
1976	56.9%	53.3%	136,927
1977	55.3%	58.0%	139,863 (est)

These trends for New York State are similar to those observed nationally; that is, college enrollment indices for men seem to be declining while the indices for women have risen significantly in recent years. Perhaps men are responding to the decline in expected return from investment in college education as predicted by Freeman (1976). The increase for women appears to be evidence of broad changes in social attitudes regarding appropriate roles and activities for women. Care should be taken in assuming the continuation of the new high level for women since part of the increase is probably attributable to the older age group included in the index. At some point the "excess" demand in the older group will be filled.

Regions and Counties

Regional and county college entrance indices present a slightly different picture. Although the basic trend for most of the NYS counties and the eight Regents regions is similar to the statewide trend, fluctuations from year to year are often greater than the one to three percent observed for the State as a whole. (See Tables 4 and 5.) Shifts of as much as five percent have occurred in individual regions from one year to the next, although smaller changes are more typical. The index for New York City has traditionally been 15 to 20 percent greater than those of other regions. While the New York City index has ranged from 63 to 70 percent, the indices for other regions have been between 45 and 52 percent. This indicates that the statewide CEI does not accurately reflect the situation in any of the individual regions.

New York City has a higher index for a number of reasons. The City has a large number of low income families and the State's Tuition Assistance Program (TAP) provides a significant incentive for low income students to attend college. Over 60 percent of the first-time students

TABLE 5. INSTATE NEW YORK STATE
COLLEGE ENTRANCE INDICES BY COUNTY
1975-1977

	1975	1976	1977		1975	1976	1977
Albany	.573	.556	.626	Niagara	.609	.552	.489
Allegany	.438	.397	.381	Oneida	.582	.597	.587
Broome	.515	.478	.479	Onondaga	.614	.530	.523
Cattaraugus	.373	.348	.339	Ontario	.482	.426	.481
Cayuga	.512	.552	.513	Orange	.473	.443	.444
Chautauqua	.440	.437	.408	Orleans	.382	.344	.303
Chemung	.507	.399	.512	Oswego	.403	.355	.311
Chenango	.353	.410	.414	Otsego	.495	.448	.446
Clinton	.425	.375	.497	Putnam	.599	.493	.552
Columbia	.493	.453	.535	Rensselaer	.546	.485	.498
Cortland	.499	.450	.467	Rockland	.616	.620	.682
Delaware	.428	.397	.521	St. Lawrence	.448	.444	.414
Dutchess	.516	.472	.474	Saratoga	.461	.429	.424
Erie	.554	.559	.563	Schenectady	.581	.600	.543
Essex	.569	.598	.497	Schoharie	.370	.375	.334
Franklin	.366	.507	.343	Schuyler	.526	.390	.500
Fulton	.509	.475	.423	Seneca	.421	.376	.452
Genesee	.560	.498	.431	Steuben	.500	.519	.471
Greene	.417	.470	.510	Suffolk	.473	.444	.483
Hamilton	.692	.633	.655	Sullivan	.622	.574	.529
Herkimer	.542	.504	.513	Tioga	.466	.442	.466
Jefferson	.460	.444	.414	Tompkins	.587	.544	.463
Lewis	.348	.347	.349	Ulster	.540	.478	.496
Livingston	.466	.466	.429	Warren	.395	.400	.357
Madison	.460	.432	.485	Washington	.378	.336	.311
Monroe	.517	.488	.486	Wayne	.369	.361	.350
Montgomery	.534	.520	.513	Westchester	.523	.512	.562
Nassau	.600	.570	.568	Wyoming	.529	.446	.455
				Yates	.487	.470	.473
Manhattan	.571	.547	.591				
Bronx	.731	.689	.743				
Kings	.741	.697	.776				
Queens	.691	.602	.693				
Richmond	.584	.470	.497				

NOTE: Residents attending out-of-state institutions are not included. The out-of-state rate has typically been about 13 percent statewide.

SOURCE: Office of Postsecondary Information Systems (HEDS), (GLR/9-78).

are from the City. Other factors contributing to the higher CEI for the City are:

- the City has a high secondary school dropout rate which results in an atypical group of more motivated high school graduates;
- many institutions and programs exist within a short distance from prospective students resulting in easy access;
- a number of recognized, high-quality institutions are readily available in the City;
- the City University system until recently has held the cost of attendance down by not charging tuition, and
- educational requirements and competition for jobs are significant in the City, with many employers providing support for attendance.

Increases in CEI in upstate regions have reduced the gap in the index in recent years. One important cause has been an increase in strategically placed community colleges which have improved accessibility to services. The seven percent drop in the New York City CEI in 1976 temporarily contributed to a reduction in the gap as well. It is still not clear the extent to which the New York City CEI will recover, but the 1977 figures suggest a total recovery.

Examination of the county rates and trends indicates that regional indices and trends should not be assumed at the county level. Figures 2 and 3 help to visualize the 1977 county rates and the shifts which occurred in the rates between 1975 and 1977. Counties within each region differ considerably in terms of both participation levels and the changes over time.

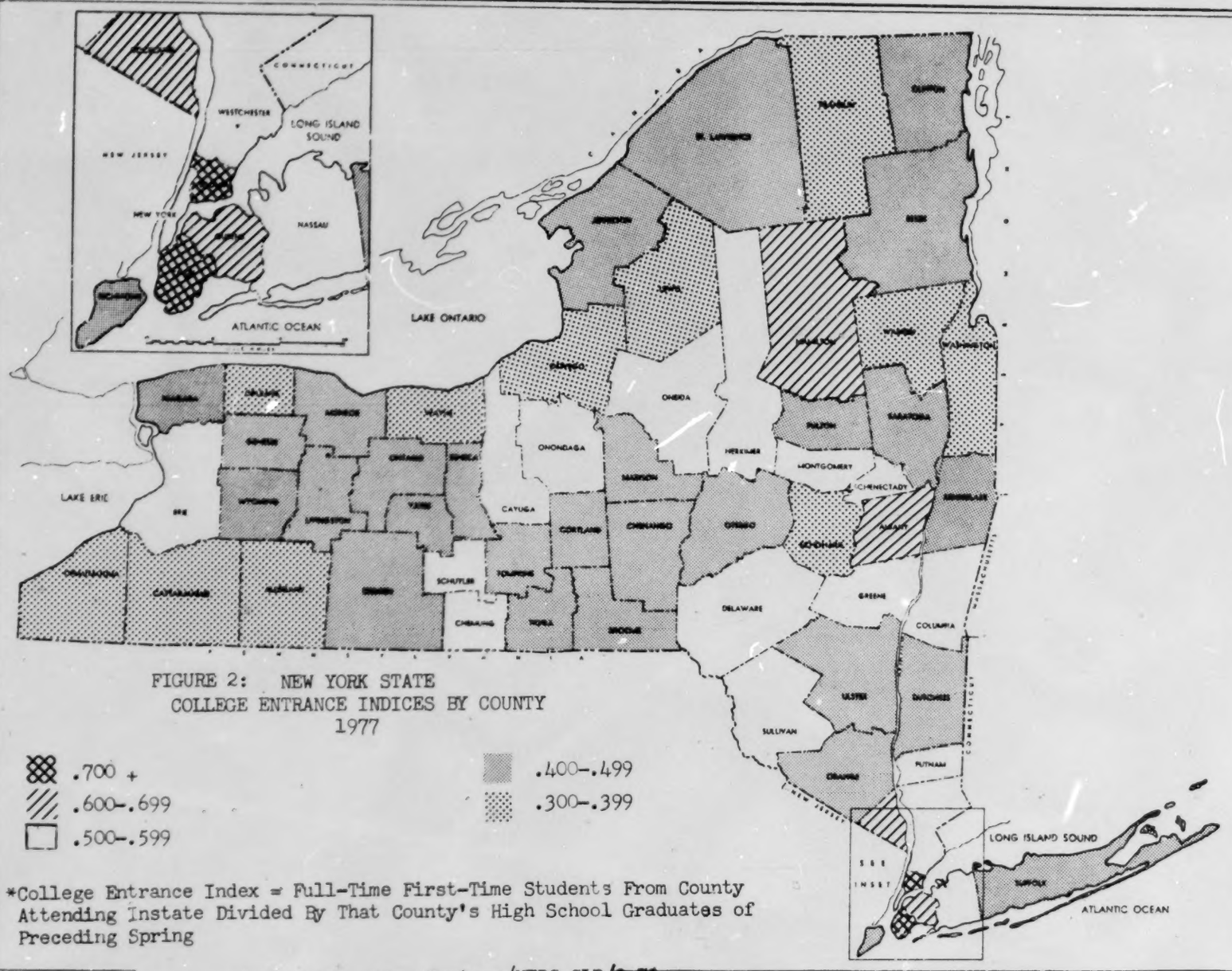


FIGURE 2: NEW YORK STATE
COLLEGE ENTRANCE INDICES BY COUNTY
1977

*College Entrance Index = Full-Time First-Time Students From County Attending Instate Divided By That County's High School Graduates of Preceding Spring

SOURCE: Postsecondary Information Systems/HEDS GLR/~~9 78~~

The Regents have generally supported the position that a college going rate (percentage of high school graduates attending college immediately after high school graduation) of 50 percent is a desirable level of access to higher education. The most recent College Entrance Index (CEI) statistics (the best available proxy for college going rates), show that only 22 of the 62 counties representing 70 percent of the population of the State were at or above the 50 percent mark in college participation in 1977, while eleven counties were below 40 percent (Figure 1 and Table 1). The College Entrance Indices appear to be correlated with either an urban/rural or a wealth measure, although the relationship is not entirely consistent. Detailed county analyses would be necessary to identify the factors that are associated with the differences.

A recent analysis indicated that raising all county CEI's to the 50 percent level would increase total enrollment by only a small amount, although individual counties might have significant increases. Some institutions may be able to increase their enrollments by expanding their recruiting efforts in counties with low indices. This may be difficult, however, if counties with low rates have small populations and people with less desire and need for higher education.

Shifts in the CEI's for individual counties between 1975 and 1977 varied from a decline of greater than 2 percentage points for 37 counties to an increase of greater than 2 percentage points for 11 counties (Figure 2). These trends occurred despite a decline of less than 1 percentage point in the statewide CEI. A weak relationship appears to exist between population density and trends in the index. The most urban counties have tended to show an increase while the least densely populated have tended to show declines. Eleven counties, primarily upstate rural counties,

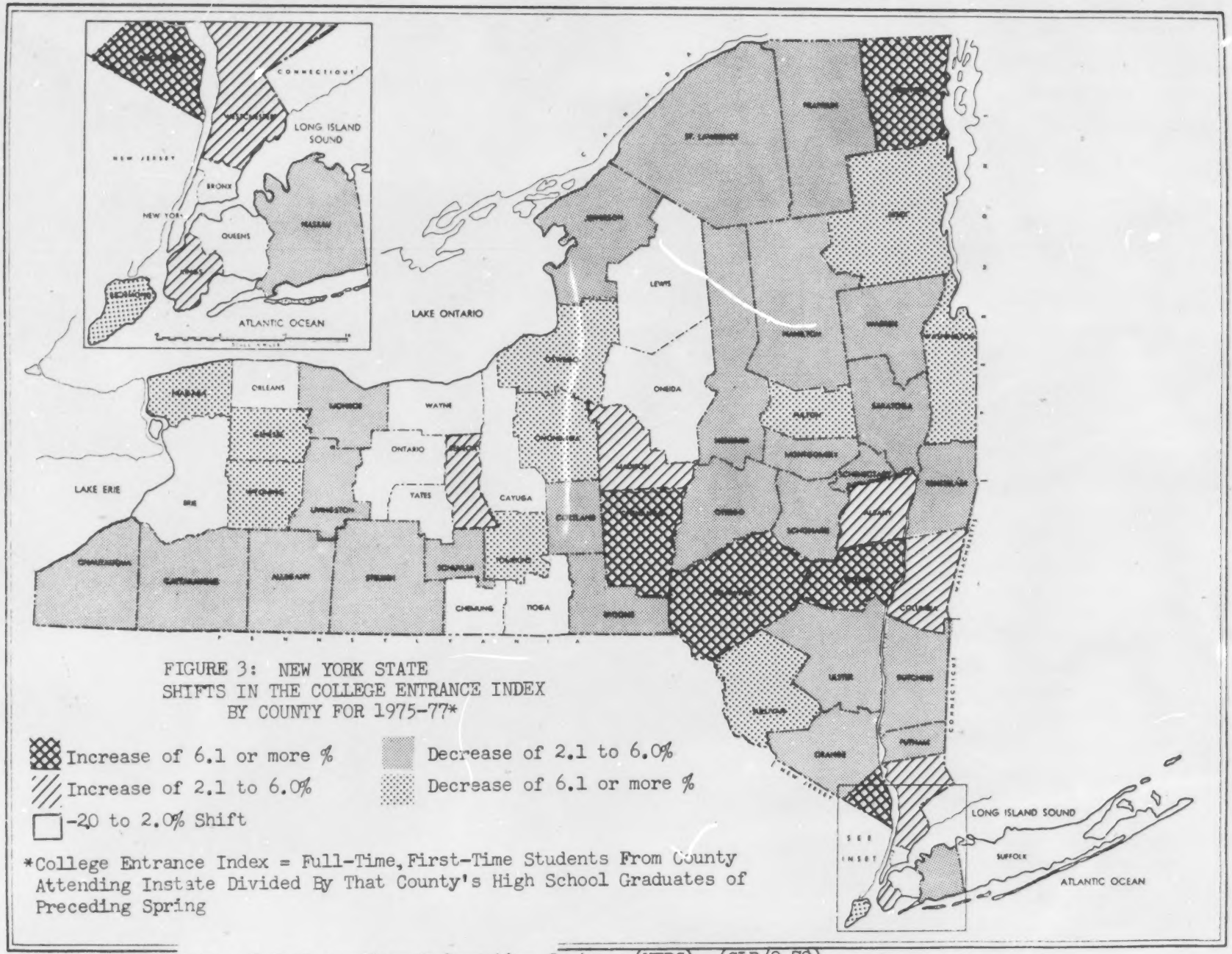


FIGURE 3: NEW YORK STATE
SHIFTS IN THE COLLEGE ENTRANCE INDEX
BY COUNTY FOR 1975-77*

- Increase of 6.1 or more %
- Increase of 2.1 to 6.0%
- -20 to 2.0% Shift
- Decrease of 2.1 to 6.0%
- Decrease of 6.1 or more %

*College Entrance Index = Full-Time, First-Time Students From County Attending Instate Divided By That County's High School Graduates of Preceding Spring

SOURCE: Office of Postsecondary Information Systems (HEDS), (GLR/9-78).

declined by more than six percentage points. There is no apparent explanation for this, but it may be that rural and poor areas have responded more to the rising costs of college attendance which have occurred in recent years. There are also indications that adult participation may be increasing, particularly in urban and suburban areas, while participation of high school graduates is slowly declining. More evidence is needed to test these assertions, and county-specific analyses would be required to understand the wide variations in participation rates observed.

CHAPTER 3

IMPORTANT INFLUENCES ON COLLEGE PARTICIPATION RATES

The numerical examples provided above illustrate some of the complexities of college participation rates. They do not, however, provide any indication about what will happen to college participation in the future. It is not an objective of this report to itemize all possible factors, but it is of interest to consider some of the factors which may have a significant impact on college attendance in the future. This serves both to illustrate further the nature of the problems to be dealt with and to alert higher education planners to potentially important situations and relationships.

Examination of the literature related to student demand for higher education indicates that dimensions such as the composition of the prospective student population have typically been underattended, while economic and labor conditions have been emphasized. A relatively comprehensive view (based on a conceptual frame of reference which is available upon request) is taken in Table 6 which identifies some of the factors that currently or may soon have a significant influence on college-going rates in New York State. These are discussed in turn below. The sequence in which they are presented is not necessarily an indication of their relative importance.

ENVIRONMENTAL FACTORS

These are factors that reflect situations and trends in society. They relate primarily to factors influencing public attitudes toward college attendance and to the value of a college education.

TABLE 6. FACTORS INFLUENCING COLLEGE ENTRANCE INDICES FOR FULL-TIME, FIRST-TIME STUDENTS IN NEW YORK STATE

Estimated Impact on CEI*	
	Environmental Factors
+ S	— Increasing cost of education.
+ S	— Decreasing value of education, depressed job markets.
- S	— Increasing participation rate of women and minority groups - a social and financial support charge
- S	— Tuition Assistance Program (TAP) incentives to switch from part-time to full-time status.
+ S	— Harder economic times, more wives working and not available.
- S	— Job or career advancement requirements are increasing.
+ S	-- The G.I. Bill is being terminated.
	Student Factors
+ S	— Migration of the primary college-going groups out of urban New York areas.
+ S	-- Sibling density greater until about 1983.
+ L	-- Changing composition of high school graduates, proportionately more from lower socio-economic groups.
?	-- High school graduation requirements are tougher - competency examinations.
?	— Family educational history is changing.
+ L	— Changing military demand on a declining high school graduate pool.
	Institutional Factors
- S	— Tuition charges established for CUNY, recovery now underway.
0	— Improved access to community colleges.
- S	-- Changing selectivity requirements.
- S	-- Further development of services and recruiting of certain markets.
0	-- Enrollment ceiling in SUNY system (not operative).
- S	— Establishment of tuition levels and student support strategies in the future may either increase or decrease CEI.

*These codes, which are based on the judgments of State Education Department staff, are provided primarily to stimulate discussion. The codes are:

S = Smaller impact
L = Larger impact
- = Negative impact
+ = Positive impact
0 = Little impact

Increasing Costs: The costs of tuition, books, child care, etc. are expected to increase in both the public and independent sectors at a greater rate than increases in income. The increased burden along with smaller portions of incomes that might be labeled discretionary could lower CEI in the State, particularly among those groups for whom higher education is "non-essential," e.g., housewives.

Declining Rates of Return on Investments in College Education: In recent years a combination of increasing costs of education, depressed job markets for college graduates, and reduced lifetime economic gain attributable to a college degree have apparently reduced college participation rates (Carroll and Morrison, 1976; Freeman, 1976; Cartter, 1976). It is not clear whether the decline identified by researchers will continue beyond that already experienced.

Lecht (1977) agrees that the economic value of a college degree has declined, but he goes on to argue that "there has been substantial overkill in the pessimistic analysis of the status of college graduates in the labor market." Among the points he feels are underattended by analysis include (a) college graduates are less susceptible to unemployment than any other group in the labor force; (b) the earnings differential favoring the college graduate group widens with age; (c) employment growth is often considered the only source of jobs, but most job openings for college graduates come about as replacement of attrition losses which the U.S. Department of Labor estimates will provide for more than half - 6.5 million - of the job openings anticipated for college graduates between 1974 and 1985; and (d) due to an expected decline in the college age population there will be fewer competing for entry level jobs in 1985.

The value of a college degree may have declined but it may also improve. It seems likely that college degree holders will continue to have better economic status than those not having a degree. Lecht's position is supported by Herbert Bienstock of the U.S. Department of Labor (CUNY, 1976) who asserts that the entry-level job market will improve for college graduates in the future due to an increase in the number of available jobs relative to the number of expected graduates. Even during the recent recession when 2 million jobs were lost nationally, the number of "professional, technical, managerial, and administrative jobs typically held by college graduates rose by three-quarters of a million."

Increasing Participation of Women and Minority Groups: Although CEI rose in New York State until 1976, the increase has not occurred for all groups. The increase has been attributed primarily to increasing enrollment of women and minority group members (Freeman and Holloman, 1975). Both social change and improved financial support systems have had an impact. Enrollment of white males had already shown evidence of decline before 1976 (Freeman, 1976). The U.S. Bureau of the Census reported in 1975 that nationally the enrollment rates of 18-19 year old males fell from 44 to 33 percent between 1969 and 1974. It is not known whether participation rates for women will increase further or whether they will turn down down in the future as they did for men.

As reported in the Higher Education and National Affairs Newsletter (1977):

> "Women under 22 years of age attending college formed a majority of 52 percent of the students last fall, according to a national survey conducted in October by the Census Bureau. The Bureau said this week that, in all, its survey showed that 47 percent of all college students under 35 years of age were women. The report noted that, in 1970 young men under 22 formed the largest

> group of college students, accounting for one-third of all college students under 35. This group now accounts for only one-fourth of college students. During the six-year period, the agency said, the number of older male students 22-34 years of age rose 41 percent, while women students in this age bracket increased by 103 percent. Enrollment of black students increased nearly three-fold since 1966, the bureau said, reaching 1.1 million in 1976, or about 11 percent of black students were attending full-time, a slightly higher proportion than for whites."

TAP Incentives: The increased level of awards given by the State's Tuition Assistance Program seems to have had a significant impact on enrollment strategies for some students. TAP makes it more cost-effective for many students to enroll full-time than part-time. Fall enrollments at City University in 1977 show strong shifts from part-time to full-time status. The total effect should be evident in two or three years, when the TAP program and its use by students have stabilized.

The increase in the maximum TAP award may have a small positive effect on CEI, but it will probably have a greater effect on the sector distribution of students. Since the maximum award already exceeds public tuition levels, the increase can be expected to impact positively only on enrollments in the independent sector. From research on price elasticities between sectors, the effect should be quite small, probably less than one percent change in enrollment levels.

Economic Hardships: New York State and the nation are expected to continue experiencing difficult economic conditions. Economic conditions and changing social attitudes have encouraged more and more housewives to enter the labor force. As a result, fewer housewives are available for "non-essential" study and CEI might be reduced slightly. However, most full-time freshmen are from a younger age group and choose to attend for different reasons. Neither currently available funds nor future economic

returns are expected to dominate prospective students' decisions to attend college. Howe (1976), among others, is particularly sceptical of the degree to which a student's choice to attend college is rational in terms of economic considerations such as postgraduate employment or income prospects. He points out that:

> "decisions are heavily influenced by non-economic factors, not the least of which is whether the high school experience has killed off the motivation for learning or developed it. -- Teenagers go to college to be with their friends: they go because they can't think of anything else to do (a condition created in part by the non-availability of jobs to 18 year olds); they go because their parents want them to; they go to find themselves, or to find a husband, or to get away from home, and sometimes even to find out about the world in which they live; they go because they have the money to do so and many fail to go because they don't. They also go in order to find their way into the world of work, but ten years after they leave college a very high proportion of them will find themselves doing a job they never prepared themselves for in high school or college."

These bases for college going decisions suggest a number of things, but the most significant may be the idea that there are probably limits on the range of college participation rates which will be observed under the existing social fabric and demographic characteristics. The potential ceiling may not be much higher than that reached in 1975 and the floor is probably higher than it was ten or fifteen years ago. These ideas need to be developed and tested, but it may be that even poor economic conditions can reduce CEI only a very few percentage points, unless there is a major recession or depression.

Increasing Job Requirements: Certification and continuing education requirements are increasing for many jobs. This will probably have a small impact on full-time undergraduate CEI, but a larger impact on part-time and graduate CEI. As enrollments have not recently been increasing it must be assumed that other factors are exerting a greater influence in the opposite direction. Additional analyses are needed to quantify the likely effects of this factor in the future.

Termination of G.I. Bill: Reduced financial support for students as a result of termination of the GI Bill may have an abrupt negative influence on CEI. The potential impact of this factor needs to be more thoroughly examined.

STUDENT FACTORS

These factors are related to the characteristics of students and their families. Often they are measured in terms of demographic changes in the population.

Population Shifts: The population in New York State has recently been, and probably will continue to be, quite mobile. The State is expected to continue experiencing out-migration. Since migrants are primarily younger adults and their children, an outflux of these residents removes disproportionate numbers of prospective full- and part-time college attendees (Carroll & Morrison, 1976). The negative impact on participation rates could be substantial. Population and high school graduate projections for New York State may have considered this factor, but even if they did, the impact on college participation must still be examined.

Sibling Squeeze:

> "Children at or nearing college age are more densely spaced within families than they were a decade ago. Moreover, this demographic compression has been most intense for black and lower-income white families. The compression will persist until the children born after 1965 (who are separated from their siblings by somewhat longer birth intervals) begin to reach college age." (Carroll and Morrison, 1976)

Response to "sibling squeeze" has not been well researched but will probably act to reduce participation rates by some unknown degree between now and 1983 or so. Part of the response may be a shift for some prospective students from a four-year to a two-year institution rather than choosing not to attend at all.

Changing Student Composition: The characteristics of high school graduates will change significantly in the next two decades. During the past decade, the birth rate in the nation and in New York State has been dropping, but an increasing percentage of the births have been among low income groups. This change will carry over to high school graduates in the future and undoubtedly to the attitudes which they hold toward college attendance (Coble, 1971; Corrazzini, et. al, 1972). A lowering of the college going rates can be expected from this influence, although the magnitude and timing has yet to be estimated.

More Stringent High School Graduation Requirements: New York State is implementing a new requirement that secondary students must pass a competency examination in order to qualify for high school gradution. Concern has been expressed that current high school graduate projections for the near future are too high because they do not adequately account for the impact of these exams. Even if this is correct, it is not certain how college enrollments will be affected. One might expect that those who fail the competency exams are as a group among those less apt to attend college anyway. If so, college going rates might increase enough to offset the decrease in the number of high school graduates. If those who fail the exam would normally have attended college, then the effect may be important only to some specific type of institution. This situation needs further study if the projections for institutional sectors and types are to be improved.

The competency exams may eventually result in improved curriculum and instruction and an increased high school graduation rate. If this happens, it must again be asked how the college going rate would be affected. Any increase in the number of high school graduates would

probably be from a group of individuals less inclined to continue to college under any circumstances. This might result in a reduction in the college-going rate for the total group of high school graduates which would offset the increased numbers.

Family Background in Education is Increasing: The educational history of one's family also has an impact on the decision to attend college. A much higher percentage of prospective students in the future may be third or higher generation college attendees than has previously been the case. Arguments can be made for either increasing or decreasing CEI as a result, and certainly for different types of attendance choices. Literature review and better analysis of the family backgrounds of future students should be undertaken with respect to this question.

Military Pressures: In the past the military draft had a direct influence on college participation. This pressure is not currently being felt, but the expected decline in the high school graduate pool of 8 percent by 1984 and 24 percent by 1990, coupled with a stable national need for 225,000 military recruits per year into the forseeable future is likely to place pressure on both the voluntary approach to military recruiting and college participation (U.S. News and World Report, 6/78). Reinstatement of the draft or some form of compulsory service is a definite possibility, although the Pentagon is supporting the recruitment of women as a more desirable alternative. A number of restrictions on the use of women in military service have been lifted and the majority of the remaining restrictions are expected to be lifted. According to U.S. News and World Report, 1.3 percent of the enlisted military were women in 1971, 6.0 percent were women in 1977, and the Pentagon has goals of 11.1 percent by 1983 and as high as 22 percent by 1988. Recruitment of women is seen as the desirable alternative by the Pentagon since it provides a way to

counter the decline in the number of men available, the drop in intelligence levels being experienced with male recruits, a 40 percent first-year dropout rate, and soaring recruitment costs.

Given the expected decline in high school graduates, any program to obtain 225,000 recruits annually will reduce the proportion of the high school graduates available to choose immediate entry into higher education. There will likely be some dislocations in higher education, possibly in the form of delayed entry after military service. The apparent movement toward governmental provision of postsecondary opportunities during military service could aggrevate the problem. Based on the national high school graduate distribution, New York State might be expected to supply .080 x 225,000 = 18,000 recruits per year, or 7.2 percent of the New York State high school graduates in 1976. For 1984, 1988, and 1992 projections, the percentages are 9.3, 9.9 and 13.0 percent respectively. If the participation pattern among those remaining held constant at the present level, the college entrance index would still decline from about .565 in 1977 to .558 in 1984, .554 in 1988 and .537 in 1992. Assuming that college entry after military service will remain at historical levels, this could mean as many as 25,000 fewer full-time undergraduates in 1992 than has been projected by the State Education Department. College participation after military service might increase if more college-oriented women are attracted to military service or decrease if there is an expansion of postsecondary training during military service. The participation pattern of the non-recruits might also change depending on the characteristics of the new recruits. If higher ability women (more prone to college participation than the average high school graduate) are recruited instead of low ability men (less college prone), the college participation pattern of the non-

recruits could be reduced even further. If a limited draft and the recruitment of women were adopted in the future, the impact would probably still be negative but a smaller impact would be expected.

INSTITUTIONAL FACTORS

These factors are related to characteristics of institutions as well as the statewide system of higher education. State decisions and practices belong in this category.

Tuition Charges at The City University: The fiscal situation in New York City and the introduction of tuition at The City University has a significant impact on participation rates in the New York City region. In 1976, the decline in the full-time, first-time student College Entrance Index was almost 7 percent. Part-time participation rates also dropped substantially. Fall 1977 enrollments indicate a recovery has already taken place, although part-time enrollment at The City University dropped significantly for the second straight year. Current expectations are that by about 1980 New York City will recover and College Entrance Indices will remain stable at slightly lower levels than existed before tuition was implemented in the City University system.

Improved Accessibility: A significant portion of the increase in CEI in New York State between 1970 and 1973 can be attributed to increased accessibility of services (e.g., community college facilities) and improved financial support systems available to many students (e.g., the Tuition Assistance Program). It is possible that the availability of services may improve further and increase CEI's somewhat in some upstate regions, but effects from this source are not expected to be significant on a statewide basis.

Selectivity Levels: Declining numbers of prospective students in the 1980's may encourage some institutions to lower their admissions standards in order to maintain their enrollment levels. Depending on the extent to which this occurs, the distribution of students across institutions may change and the CEI may be influenced in an upward direction.

Institutional Recruitment and Adjustment: Substantive changes in the services and promotion techniques of institutions which increase the awareness or change the attitudes of prospective students can alter participation rates. Institutions may change their formal and advertised statements of mission, their curriculums, the ways in which curriculums are structured and packaged, or all three (Carnegie Foundation, 1977). Coupled with carefully developed advertising and publicity directed toward prospective students, these influences could not only alter local CEI, but also shift the distribution of students in a competitive environment. Effects may be especially great for part-time students, but analyses of such change and their effects on CEI have yet to be made.

Enrollment Ceilings: Legislative or executive controls on the public sector to limit enrollments can hold down participation rates. With the existing level of facilities and the expected decline in the numbers of high school graduates, it seems unlikely that such enrollment ceilings will play a major role in the near future.

Net Price Levels: Participation rates can be altered by the choice of tuition levels and financial support strategies. Weathersby (1976) reported that a change in tuition of $100 typically results in an enrollment change of less than one percent for entering freshmen. Whether statewide or institutional managers will use these strategies to increase enrollments is uncertain. The effects could be substantial but also very costly (Jackson and Weathersby, 1975). Bishop (1977) feels that existing student support strategies are sufficient to maintain enrollment rates. Bishop also found price response coefficients to vary greatly for various ability/family income combinations. This is a particularly important consideration if the composition of student pools is actually changing as suggested previously, and if various social goals are to be considered when establishing policies.

Public sector tuition levels have risen substantially in the last year for many neighboring states. This may result in fewer students leaving the state for their education and, therefore, an upward influence on the College Entrance Index.

CHAPTER 4

SUMMARY

College participation rates are among the most important factors affecting higher education enrollments. A good understanding of factors influencing college attendance is essential to accurate enrollment projections, and important for both state and institutional planning.

This report has described historical statistics for New York State as a means of introducing some of the subleties of describing and measuring college particiption rates. It has also introduced some specific measures of college participation including College Going Rate (CGR) and College Entrance Index (CEI). In terms of the actual trends, the most significant findings are that 1975 was the peak year for CEI, that CEI has declined slightly since then, and that the relative participation of men and women has changed substantially in recent years.

A number of factors which may influence college going rates have been described along with some thoughts on the nature of the influence which they may have. Understanding their joint quantitative effect is more difficult, however, and therefore four activities are planned by the State Education Department to improve understanding of college going rates:

(1) Further effort to refine the list of influential factors,

(2) Analyses to quantify the likely effects of each factor,

(3) Development of a formal model to project college entrance indices for different regions in New York State, and

(4) Empirical clustering of institutions with regard to student choice issues and related factors.

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